

# Alaska Department of Fish and Game

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Clark, R. A., D. R. Bernard, and S. J. Fleischman. 2009. Stock-recruitment analysis for escapement goal development: A case study of Pacific salmon. Pages 743-757 [In] C. C. Krueger and C. E. Zimmerman, editors. Pacific salmon: ecology and management of western Alaska's populations. American Fisheries Society Symposium 70, Bethesda, MD.

**Abstract:** The constitutional mandate to sustain yields along with regulatory guidance from the Sustainable Salmon and Escapement Goal policies of the State of Alaska provide the impetus for development and implementation of escapement goals for salmon. When appropriate, a stock-recruitment analysis can provide vital insight on the population dynamics of a salmon stock. This insight can greatly facilitate the development of a scientifically defensible escapement goal to sustain yields from the stock. However, the role of stock-recruitment analysis in escapement goal development is often misunderstood and misapplied. Although many analysts focus on the quantity and quality of the data needed to conduct a stock-recruitment analysis, other factors such as the species of salmon, type and size of fishery, management constraints, social and economic constraints, and information content of data are also important. Much of the confusion about stock-recruitment analysis arises because, while the analysis is primarily a statistical procedure, the actual development and implementation of an escapement goal is primarily a scientific and practical endeavor. Many see the ultimate goal of a stock-recruitment analysis as the identification of the escapement that produces maximum sustained yield, although in many cases it may identify much more than that, or less. Several case studies are used to illustrate the potential uses of stock-recruitment theory in the development of escapement goals.

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